



142 892

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

February 3, 1993

Mr. Jim Langseth  
Barr Engineering Co.  
8300 Norman Center Dr.  
Suite 300  
Minneapolis, Mn. 55437

Dear Jim:

Enclosed please find the USEPA's comments on the RI/FS Phase I technical memorandum that was submitted for Agency review in August, 1992. Please review these comments and respond accordingly. If you have any questions or would like to schedule a meeting concerning these comments, please contact me at your earliest convenience.

Sincerely,

A handwritten signature in black ink, appearing to read "William J. Bolen", is written over the typed name.

William J. Bolen  
Remedial Project Manager  
U.S. EPA

encl. as

cc: S. Mulroney  
T. Fitzgerald  
T. Gowland

USEPA/IEPA Comments to Phase I Technical Memorandum  
Waukegan Manufactured Gas and Coke Plant Site

1. Sec. 1.1, 3rd bullet: Capitalize the first letter in "October".
2. Sec. 2.2: The Phase II report should identify any other local groundwater resources that are used other than Lake Michigan and identify the aquifer that is utilized.
3. Sec. 2.2.1.1: Collection of soil from the auger flights is inappropriate. A larger diameter split-spoon sampler should be considered for Phase II work to avoid this problem.
4. Sec. 2.2.1.3: Surficial soil sampling ( 0-6 inches in depth) will be required for Phase II. This will also require rewording of text and tables to delineate true "surficial" soil sampling from the currently identified "surficial" soil sampling collected from 2-4 ft. in depth.
5. Sec. 2.2.2.3: Why were only a very limited number of sampling points and sampling periods used to draw conclusions from? An extensive amount of data is available from the previous investigations which may be used to help define the site hydrology. This additional information should be included.
6. Sec.2.3.4.1: Define "RPD" values.
7. Sec. 2.4.1.1: More detail should be provided concerning the boring log for SB-03. Lithologic descriptions should be provided at the corresponding depth on the log. Were there saturated layers present within the till? A discussion of the mud rotary drilling procedures is required, including a detailed discussion of the OVA readings encountered, their significance, and any effect the drilling method had on these readings. It is also necessary to provide actual elevations for the till contours shown on Fig. 2.4-4. This information needs to be presented in tabular form also.
8. Sec. 2.4.2.2 (and subsequent text, figures, and appendices): See USEPA letter of 1/11/93.
9. Sec. 2.4.3: There is no discussion in the text of the elevated PAH's found in surface soil samples SS-08, 14, and 17. Explanation of the occurrence of contaminants in these samples is required.
10. Sec. 2.4.3.1: If the original undiluted sample results are

available, they should be included in the report. If these results are not available, it will be necessary to resample those locations where high dilution factors masked the lower range PAH's. It is imperative that a full scan be run for all samples and the results presented so that no false "ND's" are reported.

11. Sec.2.4.3.1: The text states that the approximate lateral distribution of chemicals was delineated using the sheen test field screening method. This method does not adequately delineate contaminant distribution and shall reflect this fact in the text and applicable figure(s). Also, areas with no sheen should be identified in both the text and figure(s).

12. Sec 2.4.3.2: Sample BS03 cannot be used as a background sample - this sample is contaminated with inorganic and organic compounds. Revise the text accordingly and revise the list of contaminants of concern accordingly.

13. Sec. 2.4.3.3., Pg. 41, last sentence: What is the significance of the total PAH concentration being less than 0.001% of the sample weight? Also, further definition of the statement "chemical make-up of the coal itself" is required.

14. Sec. 2.4.3.3: Strike "hazardous" in the last sentence of this section and replace with "characteristic".

15. Sec. 2.4.3.4: The only parameters which may be eliminated are those that were at background concentrations ( after revising text to address comments regarding background samples) or were clearly ND's. All other parameters must be carried through for Phase II analyses.

16. Sec. 2.4.4.1, Para. 1: List all phenolic compounds in this section and all other relevant sections - do not group under the term "phenols". In addition, no discussion is presented of the groundwater calibration being skewed to quantitate naphthalene. This must be included in the text. Finally, the assumption made at the end of the first paragraph of this section is unacceptable as stated.

17. Sec. 2.4.4.1: Further well development and resampling will be necessary to confirm the hypothesis that sediment may have influenced the reported concentrations of PAHs.

18. Sec. 2.4.4.1, Pg. 45: How can a DNAPL "at the base of the aquifer" act as a source "in the deeper portions of the aquifer"?

19. Sec. 2.4.4.1, Pg. 45: The potential source of phenols present at MW-3D should be explained in the text. In addition, a figure(s) should be added listing the concentrations for all phenolic compounds detected.

20. Sec. 2.4.4.1: What are the valence states that are present for arsenic and cyanide? Groundwater modeling, rates of migration

and ARARs are dependent upon this information.

21. Sec. 2.4.4.2: The occurrences of acetone and MEK in samples showing higher concentrations of BETX and phenol and not in lower concentration samples is indicative of these contaminants being site related.

22. Sec. 2.4.4.3: Lead must be included in the Phase II analytical parameter list. In addition, it is inappropriate to dismiss parameters from analysis because the associated ARARs are not "enforceable standards": The site must be fully characterized and a risk assessment undertaken to determine contaminants of concern. The risk assessment may determine that these contaminants, which you have stated are not "enforceable standards", pose a risk to human health and the environment and must be addressed.

23. Sec. 2.4.5: The ascertainment that there are not sensitive natural features present at the site is incorrect - contaminants are discharging from the site into the surrounding bodies of water. Be advised that a "site" is not determined by property boundaries, but instead by the extent of contamination. Revise this section and all subsequent sections accordingly.

24. Sec. 2.4.5: Waukegan Harbor is also a commercial harbor, not just an industrial harbor.

25. Sec. 2.4.5.4: All available water quality data should be collected and presented prior to finalization of this report.

26. Sec. 2.4.5.4: While the discussion of 1990 water quality data from the harbor is beneficial, be advised that site groundwater contaminants must be compared to all ARARs which may be applicable or relevant and appropriate.

27. Sec. 3, General Comments:

- \* Nested wells by P-101 are needed to delineate contaminants that may migrate to the harbor.

- \* MW-8S/8D should be moved west, in line with P-103, to delineate migration to the south of the site.

- \* Nested wells should be added to the east of MW-4S/4D to delineate migration into Lake Michigan.

- \* Nested wells in the southeast corner of the site are required to determine contaminant migration into Lake Michigan.

- \* Additional soil borings are required in the southwest corner to define the vertical extent of soil contamination.

- \* Additional borings are required at the northwest corner to define the vertical extent of contamination.

\* Additional borings are required near Trench 3 to define the vertical extent of contamination and determine the geotechnical properties of the till.

\* Additional borings are required near Trenches 14 and 23 to define the vertical extent of contamination and determine the geotechnical properties of the till.

\* Depth of all borings will be 10 feet (at a minimum) into the till and will consist of continuous sampling.

\* The following parameters shall be added to Table 2.4.7 (in addition to other parameters after review and subsequent text modifications based on comment #13): aluminum, barium, cobalt, copper, iron, lead, nickel, thallium, vanadium, zinc, manganese, methylene chloride, acetone, carbon disulfide, 1,1-dichloroethane, 1,2-dichloroethylene, chloroform, methyl ethyl ketone, 1,1,1-trichloroethane, trichloroethylene, 2-hexanone, styrene, carbazole, bis(2-ethylhexyl)phthalate, di-n-butyl phthalate, n-nitrophenol, and PCB-1248.

28. Sec. 3.1, 5th bullet: Revise to read "Assess the vertical and horizontal extent of groundwater contamination at the site".

29. Sec. 3.1, 8th bullet: A discussion in the text is required on which treatment technologies are being considered and how data collection will provide the necessary information.

30. Sec. 3.2.1: This section should; 1) state the proposed depth of the phase II borings, 2) reference the other soil investigations completed in the area, discuss the overall subsurface geology (including Barrs' findings) and include the other data in the appendices, 3) include a reference to an appendices and add ASTM-2488 to the document, 4) state what will be done with the cuttings generated during drilling, and 5) backfill the borings with hydrated bentonite.

31. Sec. 3.2.1: How will a boring be used to assess the "apparent migration of dissolved phase contaminants"?

32. Sec. 3.2.2: Specify if soil samples collected at the water table will be collected from unsaturated or saturated soils. The depths mentioned for sampling must be revised to address the previous comments.

33. Sec. 3.2.2, Lab VOC's (BETX): Head space analysis, while a useful screening tool in the field for identifying a specific interval to sample, allows for volatilization. However, samples shall be processed for analysis as described in the QAPP. No deviation from this document is allowed.

34. Sec. 3.2.2: The approved workplan states that three Phase II samples will be analyzed by TCLP - deviations from this approved document are not allowable without approval by the Agency.

35. Sec. 3.3.1: Specific comments are as follows:

- \* The purpose of MW-10S and MW-11S is unclear. More information is required.

- \* MW-9S has been omitted from the text (Pg. 65, last para.).

- \* Well construction should not be "similar" to that done in Phase 1, it should be the same.

- \* Further explanation is required in regards to PW-1: well construction should be the same as the other monitoring wells, not "similar"; additional discussion is required concerning the use of a 20 foot screened interval as a monitoring well, especially considering its close proximity to wells MW-1S and MW-1D and the fact that it will overlap existing screened intervals; fluids lost during drilling must be accounted for and an equivalent amount extracted prior to sampling.

36. Sec. 3.3.3: Additional surface water elevations must be taken in not only the harbor, but also in Slip 4 and Lake Michigan. It will also be necessary to take more than one round of measurements.

37. Sec. 3.3.3: The capability of the till to restrict the migration of contaminants is questionable. While comment #25 addresses this potential, further discussion after receipt of this letter will be necessary.

38. Sec 3.3.4: The text must define which clay till samples will be collected for triaxial permeability testing.

39. Sec. 3.3.4: The time interval for discrete water level measurements taken at other on-site wells during the pump test should be specified in the text.

40. Sec. 3.3.4: It has been proposed that the water generated during the pump test will be stored, treated, and disposed of on the ground surface. However, the data in Table 2.4-8 shows that contaminant levels increased in the effluent sample. Therefore, the proposal is unacceptable. The Agency also has concerns about disposal of such a large quantity of water on the site after treatment. These issues need to be discussed prior to the resubmittal of this document.

41. Sec. 3.4: What will be done with the purge water from the wells sampled during Phase II?

42. Sec. 3.4.1.1: Tables 3.2.1-3 are referenced as to the analysis to be performed. Only method number 8240 is given. The other method numbers should be listed also.

43. Sec. 3.4.1.2: Groundwater samples should be collected from

depths equivalent to the shallow wells. Also, will the Hydropunch be used during the 1st or 2nd sampling round?

44. Sec. 3.4.2: The Agency disagrees with the assumption made that the harbor receives the majority of groundwater discharging from the site. Strike this assumption - the forthcoming investigations will yield data to further define this unknown.

45. Sec. 3.4.2: Surface water samples should also be collected from Lake Michigan.

46. Sec. 3.4.2/3.4.3: Why are no sediment samples being collected?

47. Sec. 3.4.3: Be advised that at the conclusion of Phase II, the ecological assessment at the site must contain: 1) an evaluation of the threats of known site contaminants; 2) a description of all the ecological resources associated with the site; and 3) documentation of whether these contaminants are being released to those resources.

48. Table 2.2-25: Results for pesticides and PCBs should be included for well MW-1S.

49. Table 2.4-8: Explanation of elevated levels of contaminants in the treated effluent is required.

50. Table 3.2-1: A revised schedule should be provided in the next submittal.

51. SOP's as proposed for Phase II:

\* Thiocyanate - this SOP is unacceptable since it does not give the laboratory procedures. Also, the reference (16th edition, 1985) is obsolete.

\* Weak and Dissociable Cyanide - the SOP consists of an obsolete SM assay and lab SOP's for total cyanide in water and in soil/sediment. There is not a procedure detailed, it ignores the interferences that the assay is susceptible to, and therefore is unacceptable.